Grassroots Energy Innovations

Grassroots energy innovations: the role of community ownership and investment

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Abstract

This is a time of real significance for community energy. Governments in Scotland and the UK, as well as across Europe and around the world, are increasingly turning their attention to the opportunities that energy projects led by communities or with community involvement can provide. In this paper we focus in particular on the Scottish context to discuss the benefits that such projects can bring, and the difficulties that they can face. We then discuss possible steps to address these, before concluding with remarks about the future of communities and energy projects.

Introduction

Community energy projects – ranging from community ownership of a project, to shared investment and participation in a commercial project – are a topic of increased social and political interest. In recent years the participation of the civil society in energy production has become of increased importance in an energy market which is traditionally centralised and internationalised (Walker et al, 2010; Hall et al, 2014). There are good reasons for this, and a range of potential benefits for communities who become involved. In this paper, we discuss these benefits, and also the very significant hurdles that community groups can face. Then, drawing on the latest research for the Scottish Government, we discuss some ways in which these challenges can be addressed, and how critical issues such as funding, planning, and engagement may be being managed.

Defining 'community energy'

In this review, we discuss different types of projects that have community involvement. There are different understandings of community projects (Warren and McFadyen, 2010; Walker, 2007; Walker et al., 2006; Murphy and Smith, 2013), and of course, an extensive research literature which has discussed what a 'community' might be (Creamer, 2014; Cohen, 1985; Dalby and Mackenzie 1997; Brown and Schafft, 2011; Bell and Newby, 1974; Plant, 1974). As Rudolph et al. (2014) discuss, the 'community' is often assumed to be those physically proximate, but can also encompass communities of interest and social relations within a particular place (see also Devine-Wright and Wiersma, 2013; Yadoo et al. 2011; Woods, 2011; Rapport, 1993; Delanty 2003). It can also refer to particular organisations that act as a category of the public (see also Walker 2011; Marinetto, 2003; Ostrander, 2013). In the UK, most community energy projects are citizen-led from the outset, with the vast majority based on communities of place (Seyfang et al., 2013).

A key paper which discusses different understandings of community energy projects is Walker and Devine-Wright (2008), and they suggest a definition of 'community energy projects' as those which have the involvement of a place-based social enterprise, include participation by local people, and a distribution of collective benefits. In this paper, we are

drawing largely on examples where a community sets up and runs their own energy project ('community-led') and where a community has a financial stake and a proportion of the shared ownership of a commercial project ('community-investment'). This is because community energy projects in the UK include community-owned and self-funded renewables, but also those that are partially owned and developed in co-operation with commercial developers. These are different from projects where a community benefits from an energy project in the form of a trust fund or benefits payments (Cowell et al, 2011; Terwel, et al, 2014; Zaal et al, 2014); our interest here is in projects where a community has an active involvement. We revisit the significance of way in which 'community' is defined in an energy project later in the paper, in light of the discussions that follow.

Benefits of community energy

There are good reasons for any sort of 'community' to wish to become involved in an energy project. Research has highlighted that community involvement may be beneficial for communities, for the environment, and also for the development of renewable energy more generally.

For communities who engage in an energy project, there can be manifold benefits. Most significantly these can include anticipated financial revenue for the community. Indeed, research suggests that this is the key reason that communities set up or become involved with a project (Bomberg and McEwen, 2012; Haggett et al., 2013). A revenue stream for a community can help to make other community projects more resilient, and provide a guarantee of income that is not dependant on public-sector grants. For remote, rural communities in particular, where many community energy projects are based, this income stream may be very significant, particularly when many funding sources for community projects are short term or vulnerable (Creamer, 2014; Haggett et al, 2013).

In addition to financial benefits, there are also social benefits to be gained by communities from engaging in a project, and research suggests that these can include capacity building, increased community spirit and cohesion, and greater empowerment (Pretty and Ward, 2001; Obst et al., 2002; Cinderby et al., 2014; McMorran et al., 2013; Rogers et al., 2012; Wirth, 2014; Seyfang and Haxeltine, 2012). All of this resonates strongly with a key theme in the research on community participation, that of increasing resilience (Steiner and Markantoni, 2014, McMorran et al, 2013; Peters et al., 2010; Dale and Newman, 2008; Magis, 2010. A community energy project can be a valuable means through which this is achieved (Barr and Devine-Wright, 2012).

Community groups may therefore embark on ownership or investment with energy projects as a way to overcome dependence on public authorities, NGOs or private land-owners, in part to gain more control over energy supply and costs, but also to shape community development more broadly, and to try and secure community survival (Bomberg & McEwen 2012; Brown and Schafft, 2011; Middlemiss & Parrish 2010; McMorran et al, 2013). These are particularly issues for remote areas facing economic uncertainly and a lack of employment prospects (particularly for young people), and the consequences of a raft of social changes (such as poor housing and transport provision) (Garrod et al, 2006; Skerratt et al., 2012) and can help to strengthen and support communities.

In addition, there are of course environmental benefits from generating renewable energy in small scale, local projects, and these are an important motivator for many groups, at times combined with an emphasis on reducing their community's carbon footprint (Haggett et al, 2013). For these more environmentally-focused groups generating heat or power from renewable sources is important, alongside reduced energy use (Hoffman and High-Pippert, 2010). Indeed, it has been suggested that community projects are a very effective means through which to achieve sustainable outcomes because it is a scale with which people can engage, and projects can reflect the local context appropriately (Creamer, 2014; Seyfang and Smith, 2007; Macnaghten, 2003; Middlemiss, 2011a; Lehtonen, 2004; McKenzie-Mohr, 2000; Van der Horst 2008; Peters et al., 2010). Projects can help to develop a common sense of responsibility in terms of protecting the local environment and population (Wirth, 2014).

Benefits for renewable energy

There are also broader benefits beyond the particular community. For developers who are partners in a community-investment project, there are a range of reasons to become involved. As Aitken et al (2014) describe, these may be instrumental benefits: projects which have community involvement are more likely to be permitted, and more quickly, than solely commercial projects (Haggett et al, 2013; Haggett et al, 2014; DECC 2013). They are also likely to face reduced local opposition to new energy developments, although this is not always the case (Haggett, 2009; 2010; Loring, 2007; Warren and McFadyen, 2010; Bell et al, 2005; Walker and Cass, 2007). There may also be more normative benefits, where community involvement can lead to improved relations between a community and a developer, and be a means by which a developer can demonstrate a commitment to engagement with the community by a developer (Aitken et al 2014; Haggett et al, 2014).

Thirdly, there may be *substantive* benefits to involvement and ownership, where the outcomes may have a wider impact than on just the particular project. The image of renewables more generally could benefit from greater community involvement, being seen as more socially acceptable and serving to redress the balance between inter/national benefits and local disbenefits of renewable energy developments (Haggett, 2009; Bell et al., 2005; Walker et al., 2006; Aitken, 2010).

Challenges for community energy projects

However, research on community energy projects reveals that while there is the potential for these manifold benefits, the greater diffusion of community energy projects is not necessarily straightforward, and community investment and ownership of projects remains rare. For example, in Scotland, while there are currently 360 community energy projects, constituting 30.4 MW of installed renewable generating capacity, this is only a tiny proportion (<1%) of the total energy generated from renewables. Further, less than half of the community owned projects which are started are currently installed and generating energy (Haggett et al, 2013). Across the UK, while there is at least 60MW of community-

owned electricity generation, this is only a fraction of the energy sector as a whole (Haggett et al, 2014; DECC, 2014).

There are many reasons for this. Firstly, lack of financial capital is a key barrier (Walker, et al 2006; Haggett et al, 2014). The costs for a community group may be high – research shows that pre-planning costs (for non-capital items) for onshore wind are on average 70% higher for communities as a proportion of total project costs, than for a commercial wind developer (Harnmeijer, 2012). All investment at this stage is entirely at risk; commercial developers are often in a position to diversify these risks and uncertainties because they can engage in multiple projects simultaneously, an opportunity not usually available to community-led projects. Community groups face other resource issues too. They have no ability to barter prices down through promise of future work, as unlike commercial projects, most community projects are 'one-offs' (Haggett et al, 2013).

In addition to increased costs, community groups face significant difficulties in achieving finance. The perceived risks of a community energy project (including uncertainty around support mechanisms, problems accessing the grid, and pre-and post-consent delays) add to the general challenge of securing investment, already difficult in the present economic climate. For some communities, this can be an insurmountable hurdle; because of the difficulties or perceived riskiness of taking out a large loan, some communities prefer to accept community benefit payments and receive a guaranteed income without the risks that community investment involves (Haggett et al, 2013; Haggett et al, 2014).

Energy co-operatives have proved the single-most popular way to structure and fund community energy organisation and projects outside Scotland – this is the case in Canada, Denmark, Germany, Belgium, and the Netherlands, as well as England (Co-operatives UK, 2012; Scene, 2013). In England, 92% of aggregate community energy capacity exists through community co-operatives, compared to 12% of capacity in Scotland, where a 'Development Trust' model, in which a group raises funds through grants and loans and distributes income to community projects, dominates (Harnmeijer et al., 2013).

There are pros and cons to using different models. The co-operative model enables 'communities of interest' that potentially widen the geographic range for share issues beyond that of purely local organisations, and we have discussed above the difficulties for projects of obtaining finance. However, share issues may threaten the 'local nature' of community projects, and have the potential to lead to local opposition to projects which may be regarded as benefitting distant investors (Rudolph et al., 2014; Walker and Devine-Wright, 2008; Walker et al., 2010; Yadoo et al., 2010). Individual investment through the co-operative model is also limited to those individuals with sufficient savings to invest and could potentially undermine social cohesion if some community members are benefiting whereas others are not. Thus, although expanding the ways in which individuals and communities can invest in renewable energy has its benefits, there are also concerns regarding the inclusiveness of certain models of investment (Haggett et al 2014; Harnmeijer et al., 2013).

Secondly, in addition to difficulties of raising sufficient finance, communities may lack members with the requisite knowledge, experience, skills or time to be able to participate in a project (Ganz, 2002; Middlemiss, 2011b, Rogers et al., 2012b). In order to be successful, community groups require a mix of skills (including community engagement and

consultation; financial and accounting skills; project management and delivery; business planning; monitoring, evaluation and impact assessments) (Haggett et al, 2013). Projects depend on volunteers to take them forward and are faced with the challenge of maintaining the motivation of volunteers throughout lengthy and uncertain planning phases (Wilson and Willis 2004). In addition, all of these processes may take longer for community energy projects because, unlike private projects, they are likely to be run by part-time volunteers, not full time, paid staff. If there are any project staff, they are likely to be dependent on short term grants, and the requisite experience and expertise is lost when these come to an end (Creamer, 2014).

Further, while there has been extensive research on the way in which community projects can build cohesion and resilience, Bomberg and McEwen (2012) and Haggett et al (2013) find that it is community groups that pre-date an energy project which are most likely to be able to take it forward successfully, meaning that initial social cohesion and community activity is already required: a shared community identity underpins (rather than results from) group action. Indeed, taking on an energy project may be very rewarding but also lead to conflicts and divisions within communities as well, particularly as communities are not homogenous and very disparate interests and views can co-exist within them (McMorran et al, 2013; see also Creamer, 2014). This can have practical difficulties for progressing shared ownership projects. Haggett et al (2014) find that in community investment projects, developers can find it difficult to define and negotiate with communities near a proposed development, particularly if there are multiple communities with conflicting interests or priorities, or if the people within in a single community or location are divided in their opinion.

Thirdly, and for some projects these will be the critical issues, there is of course access to land and to a grid connection required before a project can go ahead. Scotland has a hugely concentrated pattern of private land ownership (where half the land is owned by less than 500 people) (Wightman, 2013; McMorran et al, 2013). As a result of this, across many parts of Scotland, some community energy projects have been closely associated with land reform and community land ownership. Some of the pioneers in renewable electricity generation, such as the Isle of Eigg Heritage Trust, the Knoydart Foundation, the Isle of Gigha Heritage Trust, and the Assynt Crofters Trust created projects as part of community land buy-outs in recent years (Haggett, et al., 2013; Halfacree, 2001; Skerratt, 2013); however, land remains a critical issue for many projects.

Initiatives, resources and solutions

So, there are benefits to be gained from community involvement and investment; but a number of significant hurdles. In this section, we briefly discuss some of the approaches taken to meet these challenges, and then reflect on the way forward for community projects and the resources that they need. In doing so, we draw on recently completed research for the Scottish Government (Haggett et al., 2014; as well as Aitken et al, 2014; and Haggett et al., 2013).

Firstly, finance is a key issue, whether communities are undertaking ownership of their own project or investing in a commercial scheme. In terms of raising private finance, the

accessibility of finance from the banking sector in other countries including Germany and Denmark is a significant difference to the situation in Scotland; and has had a significant impact on the development of community investment when available (Hall et al. 2014; Yildiz, 2014): Mendonca et al, 2009; Lipp, 2007; Oteman et al, 2014; Nolden, 2013). Indeed, community energy projects are much lower risk in terms of planning than their commercial counterparts, which suggests a basis upon which banks could be encouraged to lend to community energy groups.

There are a diverse range of business models and ownership structures that community groups might be able to use. In Scotland, community owned development trusts dominate; and there are advantages and disadvantages to this and other models, which may be more or less suitable in different circumstances. The co-operative model is under-used in Scotland compared to England, Wales, and other countries in Europe, and it would be useful to explore the possibilities of this model without losing sight of the value of community identity and cohesion that appears so important to community energy success.

Related to this, there is a contentious issue about how to define communities. Allowing the opportunity for a wide range of individuals and community groups to invest in a project increases the likelihood of raising the requisite finance, allows a broad engagement with renewable energy, and increases the number of people with the opportunity to become involved. Making wider use of different forms of co-operative model is a sensible option, given the current difficulties in raising finance, and the difficulties in finding community members with available time and resources. It is not, however, an easy option; finance may still be required for start up (either from loans or grants), and there is the critical issue of 'outsiders' investing in communities, from which they may be very distant. Indeed, as research from Denmark demonstrates (Oteman et al., 2009; Mendonca et al., 2009), opening up community investment opportunities to those outwith the geographic area may contribute to a weakening of public support for such projects. We therefore suggest that, while there is certainly value of a wider use of a diverse range of funding models as appropriate for each context, priority should be given to local people and community members, before those who are non-geographically proximate are invited to be involved (Haggett et al., 2014).

Secondly, research suggests that projects are more likely to start and to be successful in places with strong social capital, a history of community-based action, and a long standing community group (Bomberg and McEwen, 2012). This suggests that there may be many more *potential* community energy groups: communities which have all the required assets such as strong capacity and cohesion, but have just not yet turned to an energy project. We consider that there may therefore be value in reaching out and informing, encouraging and advising such groups about developing an energy project (Haggett et al, 2013).

Thirdly, project membership is a key issue for community energy groups. Some of the most active community energy groups tend to have dedicated, paid, project officers with the time and expertise to navigate communities through the funding, planning and political obstacles. This vital resource may be time-limited though, and dependent on fixed-term appointments associated with grant awards (Creamer, 2014). We therefore suggest that significantly more long-term (i.e. more than a year), flexible, and non-capital funding is made available to communities to pay someone to undertake this work, and/or or access to external 'consultants' (free of charge) who could help guide communities through the

process. We also suggest that local authorities play a role in coordinating and encouraging willing volunteers where key skills are absent or having full time paid staff is not an option (Haggett et al, 2013).

Fourthly, we suggest that the role of the government should not be limited to distributing material or financial resources. We have also drawn attention to the issue of access to land. We suggest therefore that consideration be given to the identification and advertisement of potential community energy sites by local authorities. Support for the development of community renewables on publicly owned land, or a voluntary register of land-owners who are willing to lease their land to community renewables developments, would also serve to address this problem (Haggett et al., 2013). Also important is the provision of tools, knowledge and networks that communities can call upon before and during the project development process. This can include increased face to face contact and networking opportunities, assistance, advice, and mentoring, and sharing stories of both failures and successes (Haggett et al., 2014).

Finally, while there are opportunities for communities to engage with an energy project, there may be little awareness that this is an option. In particular, Haggett et al. (2014) report a very significant lack of awareness about the possibility of community investment. In order to encourage the public to invest, strategies need to be broadened. Community investment may also provide an ideal opportunity to raise awareness about energy generation and consumption more generally. A government-led national campaign to encourage people to invest was identified as one potentially fruitful strategy to achieve greater civic engagement.

Conclusion

Community investment and ownership of energy projects have the potential to have far-reaching and positive impacts. There is a great deal of interest and enthusiasm in increasing the take up of projects from communities, developers, and local and national governments; but limited experience, considerable uncertainty, and very significant barriers.

Greater access to start-up finance for communities is a critical issue, combined with clear guidance and information on how and where they can access it; and further consideration should be given to how 'communities' are defined and the implications of such definitions for community investment and broader public engagement with the energy sector. The context in which energy projects are being envisaged – rising prices, worries about the security of supply – create significant push factors, but we believe that there a range of positive benefits that communities can access, with the right support in place.

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